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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/046,871	01/15/2002	Kenneth A. Ostrom	PD-99W192	5473

23915 7590 09/05/2003

PATENT DOCKET ADMINISTRATION
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EXAMINER

WAMSLEY, PATRICK G

ART UNIT PAPER NUMBER

2819

DATE MAILED: 09/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/046,871

Applicant(s)

OSTROM ET AL.

Examiner

Patrick G Wamsley

Art Unit

2819

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 07 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

Figures 3A-8B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See M.P.E.P. § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Admitted Prior Art, hereafter APA, in view of U.S. Patent 4,187,466 to Kasson et al, hereafter Kasson.

When applicant states that something is prior art, it is taken as being available as prior art against the claims. Admitted prior art can be used in obviousness rejections. See *In re Nomiya*, 509 F.2d 566 (C.C.P.A. 1975) and M.P.E.P. 2129.

APA provides a calibration method comprising the steps of applying an input signal to an analog to digital converter, hereafter ADC; determining at least one error value; and using that value to compensate each stage. APA also provides an ADC comprising a cascade of N stages; an ADC analog input port; an ADC digital output port; a calibration circuit; and an error compensation circuit.

Unlike claims 1, 9, and 13, APA does not teach application of a signal having symmetric or uniform probability density. In contrast, Kasson injects a controlled signal in the form of a symmetric triangular wave. At the time of the invention, it would have been obvious to one of ordinary skill in the art to have applied Kasson's signal teachings to APA. The motivation would have been to use the symmetric triangular wave to reduce channel crosstalk and quantizing error noise, as suggested by Kasson on col. 3.

For claim 2, 9, and 13, APA has fine, intermediate, and coarse ADC stages.

For claims 3 and 13, APA examines statistics of bit transitions.

For claims 4 and 10, APA computes probability density functions.

For claim 5, APA determines deviation from an ideal transfer function, thereby correcting gain and offset errors. For claim 6, APA uses this deviation to determine error values.

For claims 7 and 11, APA adds error values to the analog input signal.

For claims 8 and 12, APA adds error value to a reference analog signal.

Response to Arguments

Applicant's arguments filed on 07/07/2003 have been fully considered but they are not persuasive.

First, applicant disputes the identification of the prior art. In response, Figures 1 and 2 are clearly marked with "Prior Art" labels. Figures 3A and 3B illustrate typical output waveforms for the ADC of Figure 2, so they must also represent prior art. Figures 4A, 4B, 5, 6, 7A, 7B, 8A, and 8B are all linked to conventional ADC 30 [Page 5, line 13; Page 5, line 18; Page 6, line 5; Page 6, line 20; Page 7, line 4].

Applicant specifically admits that ADC 30 is "known in the art" on lines 31-32 of Page 3. No new features are disclosed in any of the drawings described above. The ADC [50] depicted in Figure 9 is not linked to any of these figures.

Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections. As described above, the material linked to conventional ADC 30 clearly qualifies as prior art. Applicant has provided no evidence that the exemplary embodiment [ADC 50], depicted in Figure 9, is illustrated in any other drawing. Lacking such evidence, the examiner must conclude that Figures 3A-8B are readable on ADC 30, as clearly stated in the current specification.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

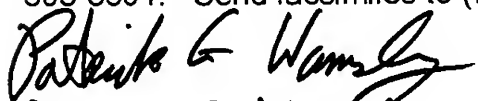
THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 2819

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick G. Wamsley whose telephone number is (703) 305-3504. Send facsimiles to (703) 746-8802.


Patrick G. Wamsley

August 27, 2003